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HISTORY AND NOMENCLATURE OF THE POCKET GOPHERS  
(*GEOMYS*) IN GEORGIA

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Apparently the first reference to Pocket Gophers in Georgia is by Bartram,<sup>1</sup> in his discussion of the fauna of Colonel's Island, Liberty County: "There is a large ground-rat, more than twice the size of the common Norway rat. In the night time, it throws out the earth, forming little mounds, or hillocks." The animal is now extinct on this island, not having occurred there within the memory of living man. Its local extinction must have been due to natural causes. In view of the plasticity of the genus *Geomys*, probably this insular inhabitant, like the one on Cumberland Island (*G. cumberlandius*), was distinct from any mainland form.

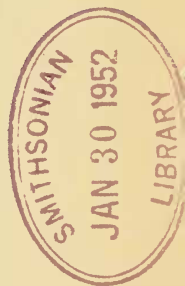
On a subsequent page, in reporting on the country south of the Altamaha River, Bartram writes:<sup>2</sup> "The little mounds, or hillocks of fresh earth, thrown up in great numbers in the night, have also a curious appearance." Although he does not here name the makers of the mounds, they must have been Pocket Gophers.

An anonymous article of 1801<sup>3</sup>—ascribable to Samuel L. Mitchill—is entitled "Undescribed Little Quadruped of Georgia." It mentions the receipt of a specimen from Georgia; it then proceeds to quote a description by John Milledge of a "*mus*" that "was caught by Mr. Stephen Pierce, living midway between Savannah and Augusta"—*i. e.*, in Screven County. This is a detailed description of the local *Geomys*. It was thought to belong "to the division of the *criceti*, or *hamsters*." Whether the specimen received was the one on which the accompanying description was based, is not made clear.

On December 13, 1802, Bartram wrote<sup>4</sup> to Benjamin Smith Barton concerning a painting of a "Northern Rat" and compared it with the "Floridan *Earth Ratt*." Both animals had cheek pouches. The painting (evidently in Barton's possession) may have represented *Geomys bursarius* (Shaw, 1800), of the Mississippi Valley.

In 1804 Anderson<sup>5</sup> furnished a figure with a description of "The Hamster of Georgia." The latter is a slightly paraphrased version of Milledge's account, to which a reference is given. The figure is apparently the first one of the species ever published. It may have been drawn from the specimen mentioned by Mitchill in 1801. In fact, the latter<sup>6</sup> claims the authorship of the description in the Anderson-Bewick volume.

On December 27, 1805, Barton wrote<sup>7</sup> to Thomas Jefferson: "The *Tucan* of Hernandez I lately received from Georgia. It is a most singular quadruped, of which the systematic naturalists know nothing sure." Although this animal was a *Geomys* (see next paragraph), there is nothing to indicate which form it was, out of the five now known from Georgia.



A year later Barton published<sup>8</sup> a note on "*Mus tuza*." The description is so brief and incomplete that it could apply to any of the Geomyidae. He completely omits any statement as to the provenance of the live specimen he had. He remarks that the animal was first described by Hernandez under the name of "Tucan." He gives no title, place of publication, or date of that author's work. If the reference had been supplied, it might have read somewhat as follows: Hernandez, *Nova Plantarum, Animalium et Mineralium Mexicanorum Historia*, Animalia, liber 1, tractus 1: 7, 1651 (Roma). Barton was almost certainly aware of the Mitchill-Milledge account of 1801, but he made no reference to it, being habitually chary of giving credit to his fellow-naturalists. He thus missed the opportunity of making the name *tuza* available for a Georgia animal. Under these circumstances Miller<sup>9</sup> was scarcely justified in citing *Mus tuza* Barton (1806) as the original reference for the Georgia Pocket Gopher, with "Georgia" as the type locality.

Mease<sup>10</sup> gives an account of the "Hamster of Georgia." It is merely a reprint of the greater part of the Mitchill-Milledge paper of 1801, with an additional sentence: "A cut of the hamster may be seen in the additions to Mr. Anderson's edition of Bewick's history of quadrupeds, New York, 1804."

Ord<sup>11</sup> lists the "Sand or Earth Rat—*Mus tuza*," with a footnote: "Called by some writers *Georgian Hamster*, though it differs materially from the Hamsters of Europe in its cheek pouches." Ord's failure to provide either a description or definite references to previous authors eliminates his use of the name *tuza* from consideration, although it was accepted in 1875 by Coues<sup>12</sup> and in 1895 by Merriam,<sup>13</sup> who defined the type locality as "pine barrens near Augusta, Georgia."

Rafinesque,<sup>14</sup> after presenting a diagnosis of his new genus *Geomys*, introduces the following species:

"*Geomys pinetis*. Raf. Murine colour, tail entirely naked, shorter than the body.—Obs. This animal has been called Georgia Hamster, by Milledge, Mitchill, Anderson, Mease, &c. It lives in Georgia, in the region of the Pines, where it raises little mounds, size of a rat."

All the references just mentioned (Milledge, Mitchill, Anderson, and Mease) are to the Pocket Gopher of the Savannah River valley. Rafinesque's name is evidently the first valid one applied to it. Screven County, Georgia, is the type locality of this form.

Harlan<sup>15</sup> and Godman<sup>16</sup> extend the range of *bursarius* as far as Georgia and Florida, and they recognize no other form in the Southeast.

Sir Charles Lyell,<sup>17</sup> writing of a visit near Millhaven, Screven County, in January, 1842, says:

"We also saw small hillocks, such as are thrown up by our [British] moles, made by a very singular animal, which they call a salamander, because, I believe, it is often seen to appear when the woods are burnt. It is not a reptile, but a species of rat (*Pseudostoma pinetorum*), with pouches in its cheeks."

Audubon and Bachman's *Pseudostoma floridana*,<sup>18</sup> as published, is a composite of several different forms, its range being given as "Georgia, Florida, Alabama, and Mississippi," with a northeastern limit at "the southwestern bank of the Savannah River in Georgia." They record specimens from Dallas County, Alabama, Ebenezer, Effingham County, Georgia, and the vicinity of St. Augustine, Florida; and they state that their species is probably the one referred to by Rafinesque as Georgia

Hamster. They thus come perilously close to making their *floridana* a synonym of Rafinesque's *pinetis*. However, the type locality of their species was restricted by Merriam<sup>19</sup> to "St. Augustine, Florida," and consequently Audubon and Bachman's *floridana* remains valid.

Le Conte<sup>20</sup> makes *floridana* a synonym of *G. "pineti"* Rafinesque; he records specimens from Florida and Alabama, and states that the species "also inhabits the lower parts of Georgia." Baird<sup>21</sup> and Coues<sup>22</sup> give a similar statement of range, keeping *floridana* in synonymy. Gesner<sup>23</sup> contributes excellent life-history notes on the "salamander, (*Geomys pineti*,) of Georgia"; but since they were secured in Russell County, Alabama, they presumably pertain to the subspecies *mobilensis* of Merriam.<sup>24</sup> Bangs<sup>25</sup> gives the range of this form as "western Georgia, western Florida, and the coast region of Alabama," while Howell<sup>26</sup> extends it north to west central Alabama.

Bangs<sup>27</sup> records numerous specimens of *G. "tuza tuza"* (= *pinetis*) from Hursman's Lake (Screven County), Adam (Richmond County), Pinetucky (Jefferson County), Doctortown (Wayne County), and Sterling (Glynn County), Georgia. He also describes two new Georgia species with very restricted ranges: *G. colonus*, from about 4 miles west of St. Mary's, and *G. cumberlandius*, from Cumberland Island.

R. M. Harper writes<sup>28</sup>:

"In both Georgia and Alabama the salamander [*Geomys*] ranges all the way across the coastal plain up to the fall-line, in about latitude 33° 15'. . . . The Biological Survey . . . has a record of just one station for it outside of the coastal plain, namely, near Chipley [Harris County], Georgia. . . .

"The southeastern salamander seems to be invariably associated with the long-leaf pine (*Pinus palustris*)." In the same paper there is also discussion of an apparent correlation between the distribution of this animal and the occurrence of periodic fires in the long-leaf pine forests.

Sherman<sup>29</sup> describes *G. fontanelus* from a very restricted area of "Norfolk very fine sand," "only a few miles in extent, lying about 7 miles northwest of Savannah." He differentiates this form from Bangs's specimens of "*tuza*" from "Hursman's Lake (Savannah River), near Bascom, Scriven County, Georgia,"<sup>30</sup> Bangs's map indicates that this lake is in the southeastern part of Screven County, whereas Bascom is in the northwestern part and about a dozen miles from the nearest point on the Savannah River. I find the name "Hursman's Lake" on no other map than Bangs's, and the matter requires clarification. In any event, however, these specimens of Bangs may be regarded as virtual topotypes of *pinetis*.

In a later paper Sherman<sup>31</sup> points out that intergradation between "*tuza*" and *mobilensis* and the races of peninsular Florida occurs between the Apalachicola and Suwannee Rivers. For this reason he treats all the Florida forms as subspecies of "*tuza*."

From the foregoing discussion it would appear that the names of certain southeastern Pocket Gophers should stand as follows:

- Geomys pinetis pinetis* Rafinesque (1817)
- Geomys pinetis floridanus* (Audubon and Bachman, 1846)
- Geomys pinetis mobilensis* Merriam (1895)
- Geomys pinetis austrinus* Bangs (1898)
- Geomys pinetis goffi* Sherman (1944)

Three other forms, already mentioned, were originally described from

Georgia as full species. An investigation of their exact taxonomic relationships to *pinetis* is beyond the scope of the present paper. They are:

*Geomys colonus* Bangs (1898)

*Geomys cumberlandius* Bangs (1898)

*Geomys fontanelus* Sherman (1940)

Maps indicating the distribution of *Geomys* in Georgia (or in parts of the state) have been published by Merriam,<sup>32</sup> myself,<sup>33</sup> and Hamilton.<sup>34</sup> Apparently variation in soil and (to some extent) isolation by means of water barriers are environmental factors of importance in the evolution of the various forms of this genus.

In the preparation of these notes I have benefited by several suggestions from Dr. Remington Kellogg.

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